

Table S1. Resume table with results for Dynamic Factor Analysis (DFA), Generalised Least Squares (GLS) and Min/max autocorrelation factor analysis (MAFA), including all explanatory environmental variables related to *M. surmuletus* LPUE in the Northwest, Southwest and South-Algarve regions. Diff. AIC – difference between initial simple DFA model (only with LPUE trend) and DFA with LPUE trend plus explanatory variable. For DFA the – and + sign indicates estimated t-values resulting from estimation of regression parameters with a negative and positive relationship between explanatory variables and response variable (t-values with an absolute value greater than 3 indicate a strong relationship among variables); For MAFA the significance level for correlations (coefficient correlation – Corr. Coef.) of EV with MAFA trend were significant at 0.44 and single MAFA trend (Auto-correlation with time lag 1) explaining 0.59, 0.66 and 0.62 of the trend variability in IXaCN, IXaCS and IXaS-Algarve (all models with 1 MAFA trend were significant: $P < 0.04$). The asterisk (*) in GLS refers to models that were better fitter with AR model (1,0) – Autogressive model. FE – Fishing Effort; SST – Sea Surface Temperature; UW – Westerly Winds; VW – Northerly winds; WMAG – wind magnitude; UPW – Upwelling; NAO – North Atlantic Oscillation. Combined models were also performed but the results of simple models were overall better, thus they are not showed.

	IXaCN – Northwestern					IXaCS – Southwestern					IXaS– South Algarve				
	DFA		GLS		MAFA	DFA		GLS		MAFA	DFA		GLS		MAFA
	AIC	t-value	slope	p-value	Corr. Coef.	AIC	t-value	slope	p-value	Corr. Coef.	AIC	t-value	slope	p-value	Corr. Coef.
Initial	64.57	–	–	–		54.69	–				65.259	–			
FE	66.23	–1.28	–0.04	0.86	–0.04	55.85	3.78	0.56	0.01	0.56	66.14	–1.07	–0.18	0.44	–0.18
SST	66.20	–0.75	0.02	0.92	0.02	56.69	–0.67	0.10	0.66*	–0.09	63.83	2.20	0.37	0.09	0.37
NAO	65.08	–0.31	–0.10	0.65	–0.10	54.81	3.31	0.26	0.1862*	0.47	66.79	0.89	0.16	0.49	0.16
UPW	59.66	2.87	0.53	0.01	0.53	56.56	–0.97	–0.18	0.44	–0.18	66.60	0.95	0.17	0.47	0.17
UW	65.50	–1.22	–0.22	0.33	–0.22	53.18	–4.04	–0.54	0.01	–0.54	61.68	–2.36	–0.46	0.04	–0.46
VW	66.43	0.20	0.04	0.86	0.04	56.09	–0.55	0.17	0.45*	–0.04	67.24	–0.16	–0.03	0.90	–0.03
UPW–spring	66.44	–0.37	–0.08	0.73	–0.08	56.65	–1.32	–0.22	0.34	–0.22	66.70	0.60	0.10	0.66	0.10

UPW-su mmer	64.70	-1.23	-0.20	0.40	-0.20		56.15	-3.50	-0.52	0.02	-0.52		64.46	-1.50	-0.31	0.17	-0.31
UW-spr ing	66.42	-0.02	-0.01	0.98	-0.01		48.45	-2.24	-0.05	0.85	-0.05		67.26	-0.01	0.18	0.4373*	0.00
UW-su mmer	66.37	-0.45	-0.10	0.67	-0.10		56.65	-2.62	-0.41	0.07	-0.41		66.00	-0.76	0.14	0.5785*	-0.16
VW-spri ng	65.46	1.07	0.23	0.32	0.23		56.55	-0.56	-0.06	0.79	-0.06		67.13	0.28	0.05	0.83	0.05
VW-su mmer	65.66	-0.97	-0.21	0.37	-0.21		55.45	-1.78	-0.24	0.30	-0.24		66.80	0.46	0.08	0.74	0.08
WMAG	66.13	-0.68	-0.13	0.58	-0.13		56.48	-0.28	-0.08	0.74	-0.08		66.01	-1.29	-0.21	0.36	-0.21
WMAG -spring	66.27	-0.55	-0.12	0.61	-0.12		56.24	0.84	0.10	0.67	0.10		67.03	-0.41	0.23	0.2057*	-0.07
WMAG -summer	65.68	0.96	0.20	0.38	0.20		56.68	0.65	0.11	0.65	0.11		66.46	-1.04	-0.18	0.44	-0.18
